In the claims:

1. (Currently amended) A method for determining a depth of drilling in objects, comprising the steps of measuring a path over which a resistance produced by an object to be processed counteracts a processing tool during its advance movement, based at least on measurements of a resistance proportional signal and an axial speed proportional signal; ~~and~~ using the measured path for determination of a depth of drilling in the object; memorizing the determined drilling depth in the object; and using the determined and memorized drilling depth in the object as an input for selecting a connection element.

2. (Original) A method as defined in claim 1; and further comprising using the determined path for generation of at least one signal selected from the group consisting of a penetration signal, a material thickness signal, and both.

3. (Original) A method as defined in claim 2; and further comprising using the at least one signal selected from the group consisting of a penetration signal, a material thickness signal, and both, as an input signal for further processes.

4. (Previously presented) A method as defined in claim 3; and further comprising performing at least one of said further processes as a visualization of the at least one generated signal selected from the group consisting of a penetration signal, a material thickness signal, and both of the object near the processing tool, as an input signal for further processes.

5. (Currently amended) ~~A method as defined in claim 4~~ A method for determining a depth of drilling in objects, comprising the steps of measuring a path over which a resistance produced by an object to be processed counteracts a processing tool during its advance movement, based at least on measurements of a resistance proportional signal and an axial speed proportional signal; using the measured path for determination of a depth of drilling in the object; and ~~further comprising~~ providing the visualization in form of a marking on the object to be processed by a process selected from the group consisting of printing and spray painting.

6. (Original) A method as defined in claim 1; and further comprising using as the processing tool as a tool selected from the group consisting of a chip-removing tool and a non-chip removing tool.

7. (Original) A method as defined in claim 6; and further comprising using as the processing tool a tool selected from the group consisting of a drill and a mill.

8. (Currently amended) ~~A method as defined in claim 1~~ A method for determining a depth of drilling in objects, comprising the steps of measuring a path over which a resistance produced by an object to be processed counteracts a processing tool during its advance movement, based at least on measurements of a resistance proportional signal and an axial speed proportional signal; using the measured path for determination of a depth of drilling in the object; and ~~further comprising~~ processing the object to be processed in form of a material composite, in which the material composite is composed of a plurality of layers selected from the group consisting of metallic layers, non-metallic layers and ~~both~~layers including metallic and non-metallic materials.

9. (Currently amended) ~~A method as defined in claim 8~~ A method for determining a depth of drilling in objects, comprising the steps of measuring a path over which a resistance produced by an object to be processed counteracts a processing tool during its advance movement, based at least on measurements of a resistance proportional signal and an axial speed proportional signal; using the measured path for determination

of a depth of drilling in the object ; and ~~further comprising~~ processing the object to be processed as a material composite composed of at least two carbon fiber plates which are fixed with one another by an adhesive material.

10. (Original) A method as defined in claim 1; and further comprising retaining without consideration load fluctuations within a path which is covered by the processing tool during its advance movement through an element selected from the group consisting of the object to be processed and a material composite.

Claim 11 cancelled.

12. (Currently amended) A method as defined in claim ~~11~~1; and further comprising using as the connection element a rivet with a rivet shaft length selected in correspondence with the at least one signal selected from the group consisting of a penetration depth, a material thickness and both.

13. (Withdrawn) A method as defined in claim 1; and further comprising generating a wear signal which corresponds to wear of the processing tool, with consideration of the resistance to the processing tool during covering the path.

14. (Withdrawn) A method as defined in claim 1; and further comprising generating a speed signal which determines a parameter of the processing tool selected from the group consisting of an advance speed and a rotary speed, based on a covered path and on the resistance counteracting the processing tool.

15. (Original) A method as defined in claim 1; and further comprising using piezo sensors for measuring the path.

16. (Withdrawn) A device for determination of a penetration depth, comprising a processing machine; a guiding carriage displaceably guided over at least one guide track; sensor means mounted on said guiding carriage; a signal amplification unit and a control and evaluation unit associated with said sensors and forming input signals of said control and evaluation unit from voltage signals generated by said sensors.

17. (Withdrawn) A device as defined in claim 16, wherein said processing machine is provided with at least one processing tool; and further comprising a processing-space and mounting robot associated with said processing machine, said control and evaluation unit generating output signals which provide an automatic taking from supply magazines of

elements selected from the group consisting of connection elements, processing tools, and both.

18. (Currently amended) A method for determining a depth of drilling in objects, comprising the steps of measuring a path over which a resistance produced by an object to be an object to processed counteracts a processing tool during its advance movement, based on sensing a resistance proportional signal and at least one axial speed proportional signal; ~~and~~ using the measured path for determination of a depth of drilling in the object by using the resistance proportional signal and the axial speed proportional signal as input signals of an evaluation unit, calculating by the evaluation unit a depth proportional output signal, and defining at least a penetration depth signal by the output signal ; memorizing the determined drilling depth in the object; and using the determined and memorized drilling depth in the object as an input for selecting a connection element.

In the specification:

Page 13, lines 6-16, amend as follows:

With these input signals Xe, Xv, Xt transmitted to the control and evaluation unit 20, it is possible to determine by a software in the control ~~space~~ and evaluation unit 20 in accordance with the present invention a path S, over which a resistance F produced by the object 15 counteracts the processing tool 7 during its advance movement into the object 15 to be processed. The path S determined by the control ~~space~~ and evaluation unit 20 is made available as in an output signal Y of the control and evaluation unit 20 for subsequent processes which will be explained hereinbelow. One or several output signals Y thereby form at least one penetration depth signal Y1 and/or the at least one material thickness signal Y2.

Please amend the paragraph bridging pages 13 and 14 as follows:

A further process for which the output signals Y of the control ~~an~~ evaluation unit are available is for example the visualization of the generated penetration depth signal Y1 or the material thickness signal Y2.

An especially simple form of the visualization is provided when, as shown in Figure 1, the output signals Y generated by the control and evaluation unit 20 control a known printing or paint spraying machine 21. It provides a marking 23 in the region of the opening 22 produced by the drill 6, which for example explicitedly shows the drilling depth or the material thickness.

Page 15, amend the paragraph in pages 11-19, amend as follows:

As shown in Figure 3, the inventive method can be used for example in a processing~~-space~~ and mounting cell 24. The schematically shown processing~~-space~~ and mounting cell 24 is formed in the shown example by a component support 25 which is turnable in various planes. The component support 25 supports arbitrarily deformed objects 15 to be processed. Furthermore, a processing~~-space~~ and mounting robot 26 which is movable in different planes is associated with the processing~~-space~~ and mounting cell 24. Its gripper arm 27 on its upper end takes a known connection piece 28.

Please amend the paragraph bridging pages 16 and 17 as follows:

In addition to the supply magazine 29 for supplying different processing tools 7, a further supply magazine 30 for supplying connecting elements 31, such as for example rivets 32 of different lengths, can be associated with the processing-space and mounting cell 24. In accordance with a further advantageous embodiment of the invention, the control and evaluation unit 20 of the processing tool 7 can be combined with a not shown control of the processing-spaced and mounting robot 26 so that the gripping arm 27 of the processing-space and mounting robot 26 grips such rivets 32 from the supply magazine 30 for the mounting elements 31, whose shaft length L corresponds to the determined penetration depth Y1 or material thickness Y_2 or is the closest to it. It is thereby guaranteed that the mass of the corresponding connecting elements 31 remains small. In a further working step the gripping arm 26 finally connects the components 15 fixed in the component support 25 by the connecting elements 1 determined in correspondence with the respective material thickness.

Please amend the paragraph in lines 4-13 on page 17 as follows:

In a further advantageous embodiment, the voltage signal U generated by the piezo sensors 12 can be used in the control and evaluation unit 20 for determination of the wear of the processing tool 7. In the simplest

case the control and processing unit 20 generates a wear signal Y3 which acoustically or visually identifies the wear of the processing tool 7 to the operator. With the use of the above described processing ~~space~~ and mounting cell 24, the generated wear signal Y3 acts directly on the gripper arm 27 so that the gripper arm 27 automatically exchanges the worn out processing tool 7 by another processing tool 7 that is located in the supply magazine 29 and is not worn out.